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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,540	12/26/2001	Yasutomo Watanabe	35.C16067	8300

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NEW YORK, NY 10112

EXAMINER

BROOKE, MICHAEL S

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 05/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/025,540

Applicant(s)

WATANABE, YASUTOMO

Examiner

Michael S. Brooke

Art Unit

2853

-- Th MAILING DATE of this communication appears on th cover sh et with th corr spondenc addr ss --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2003 and 01 March 0502.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 5 and 6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

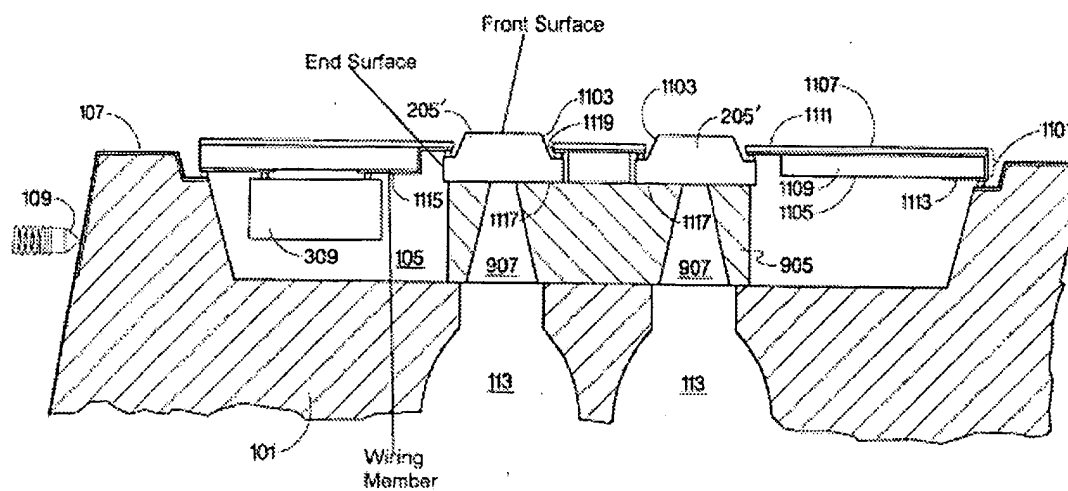
### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

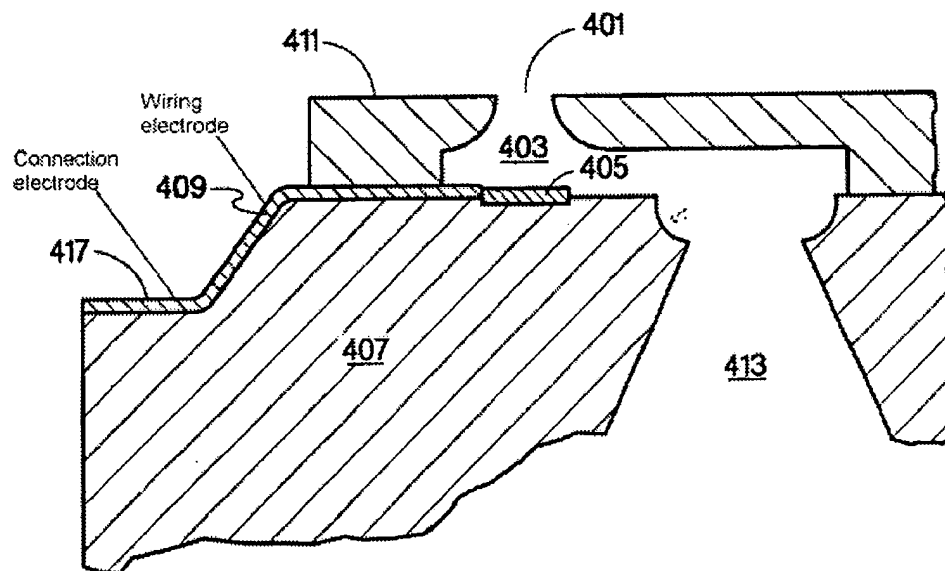
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beerling et al. (6,325,488) in view of Wong et al. (6,188,414).

Beerling et al. teaches an ink jet print head as shown below:



**Fig. 11**



**Fig. 4**

As can be seen in the figures, the print head comprises a flat substrate having an end surface and front and back main surfaces, the front and back surfaces having an area that is larger than the end surface. A wiring electrode (409) is connected to an energy generating element (405), that is formed on the front surface. A stepped surface is provided at the end of the substrate. A connection electrode is connected to the wiring electrode and is provided on the stepped surface. An electrical wiring member (1115) is superimposed onto the connection electrode and is connected to the connection electrode through a bump electrode.

With regard to claim 7, the energy generating member is an electrothermal converting element.

With regard to claim 8, the energy generating member is disposed so as to face the discharge port (401).

With regard to claim 9, Fig. 2 illustrates the print heads are mounted on a cartridge (204).

Beerling et al. teaches the claimed invention with the exception of a sealing member, wherein the sealing member does not extend beyond the discharge port.

Wong et al. teaches (Fig. 5B) an ink jet print head having a sealing member (110) which covers the electrical connections and not extend beyond the discharge port. The sealing member provides the advantages of isolating the electrical connections from the ink and cleaning mechanism of the printer, while allowing the head to operate in close proximity to the print medium (col. 2:37-45).

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It would have been obvious to one of ordinary skill in the ink jet art at the time the invention was made to have provided Beerling et al. with a sealing member as taught by Wong et al., in order to provide the advantages of isolating the electrical connections from the ink and cleaning mechanism of the printer, while allowing the head to operate in close proximity to the print medium.

The steps of the method of claim 10 are deemed to be obvious in view of the functions of the structure discussed above, as one would obviously perform the claimed methods steps to arrive at the disclosed apparatus.

4. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beerling et al. (6,325,488) in view of Wong et al. (6,188,414), as applied to claims 1 and 7-10 above, and further in view of Silverbrook (5,796,416).

Beerling, as modified, teaches the claimed invention with the exception of the substrate being made of single crystal silicon.

Silverbrook teaches an ink jet print head having a substrate (101) that is made from single crystal silicon. This material provides the advantages of allowing the drive circuitry to be fabricated in the substrate, allowing the print heads to be manufactured using standard VLSI technology and providing substrates having high mechanical strength and rigidity (col. 10:37-49). The limitation directed to the anisotropic etching of the print head is not given patentable weight, since it is a method limitation and does not patentably limit the apparatus.

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With regard to claim 3, Beerling et al. teaches that the stepped surface is located in an area of the substrate that becomes thinner in a stepwise fashion, in the vicinity of the end face.

With regard to claim 4, Beerling et al. teaches that the stepped surface is parallel to the front surface.

It would have been obvious to one of ordinary skill in the ink jet art at the time the invention was made to have manufactured the substrate of Beerling et al, as modified, from single crystal silicon for the purpose of providing the advantages of allowing drive circuitry to be fabricated in the substrate, allowing the print heads to be manufactured using standard VLSI technology and providing substrates having high mechanical strength and rigidity, as taught by Silverbrook.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-4 and 7-10 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael S. Brooke whose telephone number is 703-305-0262. The examiner can normally be reached on M-F 5:30-2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell E. Adams can be reached on 308-2847. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3431 for After Final communications.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

Michael S. Brooke  
Examiner  
Art Unit 2853

*MB*

MSB  
May 8, 2003

*Judy Nguyen*  
JUDY NGUYEN  
PRIMARY EXAMINER